

REMARKS

Claim Rejections

Claim 1 is objected to because of informalities. Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Universal Serial Bus Specification Revision 2.0 (USB2.0). Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over USB2.0 in view of Benayoun.

Drawings

It is noted that the Examiner has accepted the drawings as originally filed with this application.

Allowable Subject Matter

Applicant thanks the Examiner for noting that claim 6 would be allowable if written in independent form to include the limitations of the base claim and any intervening claims. However, Applicant believes that claims 1 and 5-9, as amended, are also allowable based on the arguments which follow.

Claim Amendments

By this Amendment, Applicant has canceled claims 2-4 and has amended claim 1 of this application to include the limitations of canceled claims 2-4. In addition, claims 1 and 7-9 have been amended to overcome the Examiner's objection and rejections thereof, while claim 8 has also been amended to better protect what Applicant regards as the invention. It is believed that the amended claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The amended claims are directed toward: a data transmission interface compatible with USB protocols, including USB 1.0, USB 1.1 and USB 2.0, and comprising at least the following interface signals: Vbus, D0+, D0-, D1+, D1- and GND signals, D0+, D0- are one differential signal set, D1+, D1- are another

differential signal set, Vbus offers interface power, GND connects to ground, said differential signal sets D0+, D0- and D1+, D1- are further designed into Master-Slave structure, said D0+, D0- is Master and said D1+, D1- is Slave, said Master signals D0+, D0- are responsible for coordination USB 1.0, USB 1.1 or USB 2.0 interfaces as well as data transmission.

Other embodiments of the present invention include: a Dual Channel Universal Serial Bus (DCUSB) device, wherein the interface comprises four differential signals, which are grouped into Master differential signal set and Slave differential signal set, wherein the master differential signal set is responsible for the transmission protocols of USB or DCUSB to the host system and is compatible with USB protocol transmission interface; the said slave differential signal set is for enhancing the data transmission rate of the interface wherein the device further comprises an interface controller with data conversion and transmission functions.

Applicant notes that the Examiner has not rejected claims 3 and 4 as being anticipated by the cited art. As a result, since the limitations of claims 3 and 4 have been incorporated into claim 1 by amendment, Applicants submits that the rejections under 35 U.S.C. § 102(b) are rendered moot, thereby leaving only the Examiner's rejections under § 103(a) to consider below.

USB 2.0 teaches the specifications for the USB 2.0 interface. As admitted by the Examiner on p. 5 of the outstanding Office Action, "USB 2.0 does not disclose expressly the two differential signal sets being designed in a Master/Slave structure, wherein the Master set handles coordination of the different version of USB specification as well as data transmission." The Examiner argues that Benayoun supplies this deficiency.

Benayoun discloses a dual I/O systems concept, which is two I/O ports working independently by wireless and further formed a first and a second serial bus to provide the use for host and device separately. Furthermore, the two serial buses are both standard USB communication protocol. In comparison, Applicant recites a parallel structure, divided I/O (D0+,D0-) into I/O Master and I/O Slave. It is important to note that only by being through the communicational protocol of I/O Master(D0+D0-) and DCUSB Host System (not USB Host) can the Slave I/O(D1+D1-) be enabled to enter the so-called DCUSB mode. It follows that, in

comparison to Benayoun, Applicants structure is not two independently-operating systems, and the connection between the Master Serial I/O is not the wireless. The DCUSB formed by two Serial I/O in Applicant's invention is a ***single working interface*** and is ***also a data communicator between Host and Device***. As a result, Applicant's structure executes a new DCUSB communicational protocol, which could be forward-compatible with the USB 1.1/2.0 protocol.

Even if the teachings of USB 2.0 and Benayoun were combined, as suggested by the Examiner, the resultant combination does not suggest: a data transmission interface compatible with USB protocols, including USB 1.0, USB 1.1 and USB 2.0, and comprising at least the following interface signals: Vbus, D0+, D0-, D1+, D1- and GND signals, D0+, D0- are one differential signal set, D1+, D1- are another differential signal set, Vbus offers interface power, GND connects to ground, said differential signal sets D0+, D0- and D1+, D1- are further designed into Master-Slave structure, said D0+, D0- is Master and said D1+, D1- is Slave, said Master signals D0+, D0- are responsible for coordination USB 1.0, USB 1.1 or USB 2.0 interfaces as well as data transmission.

Nor does the combination suggest a Dual Channel Universal Serial Bus (DCUSB) device, wherein the interface comprises four differential signals, which are grouped into Master differential signal set and Slave differential signal set, wherein the master differential signal set is responsible for the transmission protocols of USB or DCUSB to the host system and is compatible with USB protocol transmission interface; the said slave differential signal set is for enhancing the data transmission rate of the interface wherein the device further comprises an interface controller with data conversion and transmission functions.

It is a basic principle of U.S. patent law that it is improper to arbitrarily pick and choose prior art patents and combine selected portions of the selected patents on the basis of Applicant's disclosure to create a hypothetical combination which allegedly renders a claim obvious, unless there is some direction in the selected prior art patents to combine the selected teachings in a manner so as to negate the patentability of the claimed subject matter. This principle was enunciated over 40 years ago by the Court of Customs and Patent Appeals in In re Rothermel and Waddell, 125 USPQ 328 (CCPA 1960) wherein the court stated, at page 331:

The examiner and the board in rejecting the appealed claims did so by what appears to us to be a piecemeal reconstruction of the prior art patents in the light of appellants' disclosure. ... It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill in the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of the claims, it is not the type of rejection which the statute authorizes.

The same conclusion was later reached by the Court of Appeals for the Federal Circuit in Orthopedic Equipment Company Inc. v. United States, 217 USPQ 193 (Fed.Cir. 1983). In that decision, the court stated, at page 199:

As has been previously explained, the available art shows each of the elements of the claims in suit. Armed with this information, would it then be non-obvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of non-obviousness in a court of law.

In In re Geiger, 2 USPQ2d, 1276 (Fed.Cir. 1987) the court stated, at page 1278:

We agree with appellant that the PTO has failed to establish a *prima facie* case of obviousness. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching suggestion or incentive supporting the combination.

Applicant submits that there is not the slightest suggestion in either USB 2.0 or Benayoun that their respective teachings may be combined as suggested by the Examiner. Case law is clear that, absent any such teaching or suggestion in the prior art, such a combination cannot be made under 35 U.S.C. § 103.

Neither USB 2.0 nor Benayoun disclose, or suggest a modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious Applicant's amended claims.


Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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